

Letter from Novagraaf Technologies
to the European Patent Office

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Levallois Perret
March 23, 2004

Our ref.: TPI/BR 60514 PCT

Re.: International patent application PCT/FR03/00309 of January 31, 2003
In the name of France Design
For "A rear trunk lid for a convertible vehicle with a folding roof"

Dear Sirs,

This letter is in reply to the first Written Opinion sent on November 27, 2003 and for which we have obtained a one-month extension of the deadline for reply by mail sent on March 2, 2004.

An amended set of 11 claims replacing the original 11 claims accompanies this letter.

Claim 1 takes account of the prior art constituted by FR 2 777 241 (D1).

In the characterizing portion, the function of guiding the end of the pivoting movement of the lid (i.e. of applying final drive thereto) into its locked position is specified more clearly, which function was already stated at the end of the characterizing portion of original claim 1.

It should be observed that support for the terms used in the characterizing portion of accompanying claim 1 is to be found in the description, in particular on page 6, lines 25 to 33, and page 7, lines 14 to 16 (for the second embodiment). Note should also be taken of the repeated use in the text of the expression "guidance of the end of the pivoting of the lid into (or towards) its (closed) locked position" (page 5, line 17, page 5, line 28, page 6, line 14, page 10, line 12, in particular).

In D1, the hook 10 acts only when the ring 12 (and thus the lid) has reached its closed, locking position (as in Figure 3). The hook 10 does not engage the ring 12 "in a position (of the corresponding element of the lid) that is as far away as possible from its locked position". Thus, the lid as a whole is not guided via its "bearing shape (12)" by the hook during the end of its pivoting movement into its locked position.

However, there is nothing in D1 that makes such a characteristic of final drive and guidance obvious, since D1 proposes the contrary solution: the hook acts only once the locking ring 12 (and thus the lid) is in its closed position at the end of the pivoting movement.

In the accompanying amended set of claims, claims 2 and 3 correspond to original claims 2 and 3.

Claim 4 is a combination of original claims 4 and 5.

Claims 5 to 7 correspond to original claims 6 to 8.

Original claims 9 and 10 have been deleted.

Original claim 11 (the independent vehicle claim) has been split into two: accompanying claims 8 and 9.

New claim 10 (depending on claim 8) repeats a portion of original claim 11 and specifies (in correspondence with the characterizing portion of new claim 1) that the hook thus controls the end of the pivoting movement of the lid, in co-operation with said pivoting control means of the lid (in particular the actuators 60).

If necessary, reference can be made to the description on page 6, lines 30 to 33, or page 7, lines 4 to 16.

A method claim 11 has also been added.

The precharacterizing portion of this claim 11 is based on elements of original claim 1 and on the pivoting and locking characteristics that already existed firstly in D1 (precharacterizing portion) followed by those that are specific to the invention (characterizing portion).

Reference can usefully be made to the same passages of the description as those specified above, and also to page 4, lines 22 to 27 for the actuators.

Concerning the position of the problem posed, the new claims remain compatible with the introduction given on pages 1 and 2 of the description: the structural and functional characteristics in D1 assume accurate relative positioning between the ring 12 and the hook 10, since otherwise the hook runs the risk of coming into abutment against the ring without being able to lock it.

The advantage stated in particular on lines 20 to 24 of page 2 of the description does not exist in D1.

On the basis of the above, and of the accompanying documents, the Applicant requests that a favorable opinion be issued.

Yours faithfully,

(signed)

Thierry PICHAT 0127160

Enc. Form 1035

New set of claims (5 pages, 11 claims)

[The page and line references in this translated letter remain applicable to the original French specification, and have not been amended to point to the corresponding passages of its translation into English.]

CLAIMS

1. A lid (4) of a rear trunk (3) for a convertible vehicle (1) whose roof (2) is foldable into the rear trunk (3) of said vehicle (1), the lid having two front
5 pivot assemblies (5) adapted to cause the lid (4) of the rear trunk (3) to pivot forwards, and two rear pivot assemblies (7) adapted to cause said lid (4) to pivot rearwards, each of the pivot assemblies (5, 7) comprising a base (9) secured to the bodywork (10) of the vehicle
10 (1), a body (11) connected to the lid (4) of the rear trunk (3) by a hinge-forming member (12) and comprising a first engaging element (13) adapted to be releasably received by a second engaging element (14) of complementary shape forming part of the corresponding
15 base (9), and locking means comprising hook-forming means (15) pivotally mounted on the base (9) and adapted to engage with a complementary bearing shape (17, 21) of the first engaging element (13) to bear against said bearing shape (17, 21); and for locking the body (11) in its
20 position where it is locked relative to said base (9), the lid being characterized in that the hook 15 is shaped and arranged on the seat 11 in such a manner that it becomes engaged with said complementary bearing shape (17, 21) of the first engaging element (13) with said
25 first engaging element being in a position that is as far as possible from its locking position, and thus guides the end of the pivoting movement of the lid (4) into the corresponding locked position.
- 30 2. A rear trunk lid according to claim 1, characterized in that the first engaging element (13) includes a wall (17) extending substantially perpendicularly to the path (18) of said first element (13) coming into its locked position in the corresponding base (9), and in that the
35 hook (15) is shaped and disposed in such a manner that its free end (20) bears against said wall (17) to urge the first engaging element (13) towards its locked

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position in the corresponding base (9) and to lock it therein.

3. A rear trunk lid according to claim 1, characterized
5 in that the first engaging element (13) includes a lug
(21) projecting transversely towards the hook (15), and
in that the hook (15) is shaped and disposed in such a
manner that its free end (20) bears against said lug (21)
to urge the first engaging element (13) towards its
10 locked position in the corresponding base (9), and to
lock it therein.

4. A rear trunk lid according to any preceding claim,
characterized in that it includes means for causing each
15 hook (15) to pivot in one direction or the other in order
to lock or release the first engaging element (13), the
pivot means comprising a motor (26) adapted to turn the
pivot pin (25) of the hook (15) directly or to drive a
wormscrew (27) meshing with a set of teeth (28) secured
20 to the hook (15) or a gearwheel (27a) meshing with a rack
(35) carrying a finger (36) bearing against one wall (37)
or the other wall (38) of a notch (39) formed in the hook
(15), or to drive a stationary pivoting nut (29) which on
rotating drives a screw (30) carrying a ball (31) bearing
25 against one wall (32) or the other wall (33) of a slot
(34) formed in the hook (15), or to cause one of two
pivot arms (55, 56) each hinged at one end to the second
engaging element (14) and at the other end to the hook
(15) to turn.

30
5. A rear trunk lid according to any preceding claim,
characterized in that the first engaging element (13) is
a male element that is substantially wedge-shaped, and
the second engaging element (14) is a female element
35 including a cavity (16) that is substantially wedge-
shaped and adapted to receive said male, first element
(13).

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6. A rear trunk lid according to claim 5, characterized
in that the wedge shape of each engaging element (13, 14)
extends in a vertical plane extending transversely
5 relative to the lid (4).

7. A rear trunk lid according to any preceding claim,
characterized in that the hinge-forming member (12) of
each pivot assembly (5, 7) is a pivot pin (44) extending
10 in the transverse direction (45) of the lid (4) and
carried by an arm (46) having the corresponding wedge-
shaped male element (13) secured thereto.

8. A convertible vehicle (1) having a roof (2) that is
15 foldable into the rear trunk (3) of said vehicle (1), the
vehicle being characterized in that it includes a rear
trunk lid (4) according to any preceding claim.

9. A convertible vehicle (1) according to claim 8,
20 characterized in that it further includes means, e.g.
actuator type means (60), for causing the lid (4) to
pivot forwards in a first direction (6) or rearwards in
the opposite direction (8) between its closed position
and one or other of its open positions (4a, 4b), the
25 vehicle advantageously including means for manually
unlocking at least one of the two rear pivot assemblies
(7) from outside the vehicle.

10. A convertible vehicle (1) according to claim 8,
30 characterized in that:

- it further includes means, preferably actuator
means (60), for causing the lid (4) to pivot forwards in
a first direction (6) or rearwards in the opposite
direction (8) between its closed position and one or
35 other of its open positions (4a, 4b), and

- the hook (15) controls the end of the pivoting
movement of the lid (4) by co-operating with the means,

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preferably said actuator means (60), for controlling pivoting of the cap.

11. A method of locking a lid (4) of a rear trunk (3) of a convertible vehicle (1) whose roof (2) is foldable into said trunk (3), the lid having two front pivot assemblies (5) adapted to cause it to pivot forwards, and two rear pivot assemblies (7) adapted to cause it to pivot rearwards, each of the pivot assemblies (5, 7) comprising a base (9) secured to the bodywork (10) of the vehicle (1), a body (11) connected to the lid (4) of the rear trunk (3) by a hinge-forming member (12) and comprising a first engaging element (13) adapted to be releasably received by a second engaging element (14) of complementary shape forming part of the corresponding base (9), the method comprising steps in which:
- the lid (4) is caused to pivot relative to the bodywork using means, preferably actuator means (60), for controlling the pivoting of the lid; and
 - the lid is locked in a position where it is locked relative to the bodywork by means of locking means comprising hook-forming means (15) pivotally mounted on the base (9) and becoming engaged with a complementary bearing shape (17, 21) of the first engaging element (13) by bearing thereon, thereby locking the body (11) in its position where it is locked relative to said base (9), the lid being characterized in that while the lid (4) is still at a distance from its locked position, the end of its pivoting movement is controlled, into said locked position, by means of said hook-forming means (15) which, while pivoting, guide the end of the movement of the lid (4) by co-operating with said means, preferably said actuator means (60), for controlling pivoting of the lid.

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